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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,955	10/04/2004	Yukihiko Minamida	80653(47762)	7477
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EXAMINER				
AFTERGUT, JEFF H				
ART UNIT		PAPER NUMBER		
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12/17/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/508,955

Applicant(s)

MINAMIDA ET AL.

Examiner

Jeff H. Aftergut

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 10-12, 15, 16 and 19-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-12, 15, 16 and 19-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/888)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3, 10-12, 15, 16, 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Japanese Patent 51-41102 (newly cited, of record), Nichol, Soviet Union 1074719 and UK 2,213,406 (newly cited).

The admitted prior art as described by applicant in the specification from page 1, line 15 to page 4, line 10 (and in particular page 1, lines 15-21, page 3, lines 3-14), the applicant has admitted that it was known at the time the invention was made to apply a hot melt adhesive material via a roller applicator upon a wood surface and subsequently laminate a decorative paper upon the wood surface. The problem faced with the artisan is that because of the high viscosity of the hot melt adhesive and the limited open time, the hot melt adhesive is not self leveling and does not provide a smooth coating on the surface which was suitable for decoration with the decorating sheet material. The admitted prior art stated that it was desirable to utilize a hot melt adhesive because of concerns regarding volatile emissions for example. The admitted prior art suggested that hot melt adhesive known for use in the processing included reactive polyurethane hot melt adhesives as well as ethylene vinyl acetate hot melt adhesives, see page 3, lines 3-6 for example. The admitted prior art additionally clearly suggested that the coating was applied to the upper surface of the wooden substrate as coating the underside would clearly not have a "self-leveling" problem as identified in the admitted

prior art. Note additionally that the admitted prior art appears to suggest that the coating operation was one of a roller coating operation with a doctor roller. The reference failed to teach that one skilled in the art would have coated the hot melt adhesive upon the substrate with a speed differential between the rate at which the wood substrate was fed and the rate of rotation of the coating roller. Additionally, there is no indication that the coating operation employed multiple coating stations which coated the coated base with hot melt multiple times.

The reference to Japanese Patent '102 (only the abstract of the patent is available) suggested that it was known at the time the invention was made to coat a plate like object (note that the assignee was Noda plywood and it is therefore highly likely that the plate like object was wooden) wherein the device included a plurality of roller coating stations to coat the plate like object. Each coating device 2, 3, included a roller coater 2d, 3d as well as an associated doctor roller 2c, 3c. The reference additionally appears to suggest that the coating roller operates at a slower speed than the travel speed of the plate like object being coated. The reference suggested that those skilled in the art would have applied the adhesive upon the substrate with multiple rollers wherein the coating was applied to the upper surface of the substrate and wherein the coating roller included a doctor roller. Additionally, the reference alluded to the difference in speed between the coating roller and the conveying roller which fed the substrate through the system.

The reference to Nichols suggested that one skilled in the art that the transfer of the hot melt glue upon the substrate would not have transpired had the roller applicator

been operated at the same speed as the conveyed substrate where the roller was rotated in the same direction as the direction of travel of the substrate. To ensure proper transfer of adhesive from the coating roller, one would have operated the roller at a speed differential of about 25% as suggested by Nichols. Applicant is referred to column 2, line 54-column 3, line 4. Clearly, in order to facilitate the transfer of the hot melt upon the substrate in the admitted prior art, one skilled in the art would have rotated the coating roller at a speed which was at least 25% slower than the speed that the substrate was conveyed. The combination failed to expressly teach that a pool of adhesive was located between the coating roller and the doctor in the coating operation. Note that Japanese Patent '102 provided for a doctor roller and a coating roller but did not depict that the adhesive was disposed between the doctor and the coating roller in the processing therein. Additionally, the combination failed to teach that those skilled in the art would have envisioned that the surface of the roller would have been provided to allow for slipping wherein the coating roller was provided with a rubber surface.

The reference to Soviet Union '719, as previously discussed in earlier Office actions, taught that one coating a wooden substrate with an adhesive material would have employed a coating roller as well as a doctor in the form of a roller. The reference additionally taught that one skilled in the art would have supplied the adhesive to the nip between the doctor and the coating roller in the operation. It should be noted that one must have supplied the adhesive to the coating roller in the admitted prior art and Japanese Patent '102. To provide the adhesive at the nip between the coating roller and the doctor roller in the application of a hot melt adhesive material to a wooden substrate

was known to those skilled in the art as evidenced by Soviet Union Patent '719. The combination, nonetheless, did not teach or suggest a rubber surface for the coating roller.

The reference to UK '406 suggested that one skilled in the art of coating a substrate with a hot melt adhesive of a high viscosity would have associated a rubber sleeve onto the coating roller in order to better control the transfer of the adhesive upon the substrate being coated. Additionally, the inclusion of a rubber sleeve upon the application roller would have enabled one to reduce the amount of material which was retained by the coating roller to better control the thickness of the material applied upon the substrate. The applicant is more specifically referred to the abstract of the disclosure, page 1, lines 13-page 2, line 2 and page 3, lines 10-23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a rubber sleeve about the exterior of the adhesive coating roller in order to minimize hot melt adhesive build up on the coating roller as well as to provide for the better transfer of the adhesive to the substrate being coated as suggested by UK '406 in the process of coating a wooden substrate with the hot melt adhesive wherein the adhesive was supplied to a nip of a coating roller and a doctor blade as suggested by Soviet Union patent '719 (as noted above the use of a doctor and coating roller construction was well known and the adhesive must be supplied' to the coating roller somehow in order to provide the same with the adhesive necessary for the coating process) wherein one employed a hot melt adhesive coater in the form of a coating roller which was operated at a speed at least 25% slower than the speed the substrate was conveyed in the

coating operation in order to ensure adhesive transfer uniformly to the substrate as suggested by Nichols wherein plural rollers operated to apply the coating of hot melt material upon the wooden substrate (where the rollers were operated at differing speeds from the speed of transfer of the wooden material through the coating device) as suggested by Japanese Patent '102 whereby one applied a coating of a reactive polyurethane hot melt adhesive upon the wooden substrate as such was known to have been desirable as taught by applicant's admitted prior art.

With respect to claim 2, note that Japanese Patent '102 suggested that plural coatings would have been applied upon the wooden substrate when coating with a hot melt adhesive. Regarding claim 3, note that the reference to Nichols suggested a speed reduction of at least 25% when the coating roller was driven in the same direction as the direction of feed of the material to be coated with the hot melt (as such allowed for a smooth coating thereupon)> regarding claim 10, the reference to the admitted prior art suggested that one would have laminated a substrate upon the wooden material bearing the hot melt adhesive coating thereon. Regarding claim 11, note that Japanese Patent '102 suggested that those skilled in the art would have applied plural coatings of the hot melt adhesive upon the article to be coated. Regarding claim 12, the admitted prior art suggested that the material being laminated upon the wood was a decorative film or paper and additionally admitted that reactive polyurethane hot melt adhesives were known per se. regarding claim 15, the reference to UK '406 discussed the gap between the rollers employed in the coating operation therein, see page 5, lines 20-33, for example. As previously noted the specific gap would have been determined through

routine experimentation. Regarding claim 16, the admitted prior art suggested the use of a reactive hot melt adhesive formulation from polyurethane. The material appears to be identical to that employed by applicant and thus would intrinsically have identical properties. Regarding claims 19 and 20, note that the admitted prior art suggested lamination wherein the laminated object was an "architectural material". Regarding claims 21 and 22, the references to the admitted prior art as well as Japanese Patent '102 for instance suggested that the material was fed horizontally through the coating operation. Regarding claim 23 and 24, the admitted prior art suggested that one skilled in the art would have laminated a decorative film upon the substrate after the coating operation. Regarding claims 25 and 26, the reference to UK '406 suggested the use of a rubber sleeve on the application roller therein.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with Nagata.

The references as discussed above clearly suggested that one employ a hot melt adhesive of a reactive polyurethane type in the processing. The references do not expressly state what the viscosity of the adhesive material is in the operation. However as it was a known adhesive material useful for the processing as admitted by the applicant (see above), one would have expected that the reactive hot melt polyurethane adhesive would have had the same properties as that recited as it was the same material being employed. To further evidence that one skilled in the art would have melted the reactive hot melt adhesive (polyurethane) at a temperature of about 100 degrees C wherein the adhesive exhibited the specified viscosity as claimed and the

adhesive was useful for bonding with wood materials, the reference to Nagata et al is cited.

Nagata et al suggested that those skilled in the art would have known that a hot melt adhesive of the reactive polyurethane type included hot melt compounds having a melting point above 100 degrees C and having a viscosity lying between 3200 and 15000 cps as suggested by table 2, column 8, lines 50-55, column 2, lines 1-5, and column 3, lines 24-33. Clearly, one skilled in the art at the time the invention was made would have readily appreciated that the hot melt composition which was a reactive polyurethane hot melt would have had the specified properties as identified in the claims including the specified viscosity and melting point (temperature). One viewing the prior art as a whole would have understood to heat the hot melt to the appropriate processing as disclosed by Nagata et al in order to appropriately apply the adhesive upon the substrates as disclosed as each type of adhesive employed has a different melting temperature (processing temperature). It would have been obvious to one of ordinary skill in the art at the time the invention was made that those utilizing a reactive polyurethane hot melt adhesive to coat a wooden substrate as was known by the admitted prior art would have understood that such an adhesive had the specified properties of viscosity and melting point as identified by Nagata et al wherein the hot melt was useful for adhering to wood wherein one applied the adhesive with a roller applicator in accordance with the teachings as set forth above in paragraph 2.

4. Claims 12, 19, 20, 23, 24, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with Japanese Patent 58-28376 (newly cited).

The references as set forth above, in particular the admitted prior art, suggested that it was known to employ a reactive hot melt adhesive to join a decorative film foil or paper to a wood substrate. The references failed to make mention of the specific thickness of the coating applied to the substrate (i.e. the thickness of the hot melt adhesive used to join the decorative covering material to the wooden substrate). The reference to Japanese Patent '376 suggested that those skilled in the art would have known to apply a decorative layer of paper, film or foil to a wooden substrate and bond the same thereto with a hot melt adhesive wherein the amount of adhesive employed to adhere the covering to the wooden substrate was between 10 to 30 microns in thickness. It should be noted that the admitted prior art suggested that it was known to coat the substrate which was being applied instead of coating the wooden substrate and that one skilled in the art viewing the reference to Japanese Patent '376 would have understood that the amount of adhesive utilized to apply the decorative covering to the wooden base would have been the same regardless of whether the substrate or the base was coated with the hot melt adhesive. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a hot melt adhesive coating having a thickness of between 10-30 microns to attach and adhere a decorative film, foil or paper to a wooden substrate as suggested by Japanese Patent

'376 in the process of making a decorative covered wooden laminate as set forth above in paragraph 2.

Response to Arguments

5. Applicant's arguments with respect to claims 1-3, 10-12, 15, 16, 19-28 have been considered but are moot in view of the new ground(s) of rejection.

The applicant essentially takes the position that the cited prior art previously failed to teach the newly presented claim including the limitation relating to the surface characteristics of the coating roller being capable of reducing slipping in the fashion recited. While the reference to UK '406 did not expressly relate to this reduction in slipping, the applicant is advised that one skilled in the art would have readily appreciated that the use of a rubber sleeved coated roller would have been obvious to one skilled in the art for the reasons presented above and as discussed in UK '406. Inclusion of such a coating roller which was rotated at a rate slower than the feed of material (as suggested by Japanese Patent '102 and Nichol) would have resulted in the slipping feature recited in the claim (as such was accomplished with a rubber covering on the roller which was suggested by UK '406.

The additional new limitations presented in the new claims have been addressed above. No claims are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:30-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff H. Aftergut/
Primary Examiner
Art Unit 1791

JHA
December 10, 2008